

CLAIMS

- 1.- An imaging system for multiple view imaging comprising at least a first and second video processing device, each of the at least first and second video processing devices being for displaying a video image on one or more display devices,
- 5 each video processing device receiving at least a first sequence of image frames comprising at least a second sequence of image frames and a third sequence of image frames, the at least second and third sequences of image frames being for generating at least first and second video streams, respectively, and
- 10 each video processing device outputting a fourth sequence of image frames, the fourth sequences of image frames being for generating at least one of the at least first or second video streams, the fourth sequences of image frames from the at least first and second video processing devices being asynchronous with respect to the first sequence of video frames,
- 15 wherein the imaging system is adapted to utilize a linking signal for synchronising images displayed by at least one of the at least the first and second video processing devices on the display device.
- 20 2.- An imaging system according to claim 1 wherein the fourth sequence comprises at least a fifth sequence of multiple view display image frames and a sixth sequence of multiple view display image frames, the at least fifth and sixth sequences of image frames being for generating the at least first and second video streams, respectively.
- 25 3.- An imaging system according to claim 1, wherein the at least first and second video images are sequenced framewise when displayed to form a multiple view image.
- 4.- An imaging system according to claim 1, wherein the fourth sequence comprising, at least, the fifth and sixth sequences is any of:
- 30 a single video output signal with video frames containing multiple fields, a single video output signal with video frames using even field/odd field, a single video output signal wherein field imagery is spatially separated in

single or multiple video streams,
a multiple video output signal comprising, at least, a first single video output signal and a second single video output signal, where the video output signals are interpreted according to any of the above methods.

- 5 5.- An imaging system according to claim 1, wherein the linking signal is an additional signal to those signals required to display the, at least, first or second video images per se.
- 6.- An imaging system according to claim 1, wherein each video processing device receives furthermore an input control signal corresponding to an
- 10 input rate and phase of the, at least, second and third sequences of image frames.
- 7.- An imaging system according to claim 1, wherein the linking signal is a signal which is generated externally to the video processing devices.
- 8.- An imaging system according to claim 1, wherein the linking signal is a
- 15 signal which is generated internally in one of the video processing devices.
- 9.- An imaging system according to claim 1, furthermore comprising at least one image source.
- 10.- An imaging system according to claim 9, there being at least two image
- 20 sources of different types or operating at differing rates or phases, i.e. asynchronously, or both.
- 11.- An imaging system according to claim 1, adapted to process the first sequence of input image frames and having means for field rate converting the first sequence.
- 25 12.- An imaging system according to claim 1, wherein the, at least, second or third sequence is processed in frame sets.
- 13.- An imaging system according to claim 2, wherein the imaging system is adapted to generate an output control signal for an image modulation device allowing the image modulation device to properly synchronise with
- 30 the output rate and phase of the, at least, fifth and sixth sequences.
14. - An imaging system according to claim 13, wherein the image modulation device is any of active glasses with a synchronisation system, passive glasses with active polarization device, or another actively controlled

obscuration device.

- 15.- An imaging system according to claim 13, wherein the output control signal is functionally compatible with the linking signal.
- 5 16.- An imaging system according to claim 6, wherein the input control signal is provided by means of a separate signal, a signal encoded on a vertical synchronisation signal, a signal encoded as an even/odd field, a signal encoded in a video signal, or any other means to convey intent.
- 17.- An imaging system according to claim 1, wherein the first sequence comprising, at least, second and third sequences is any of:
10 a single video input signal with video frames containing multiple fields,
a single video input signal with video frames using even field/odd field,
a single video input signal where field imagery is spatially separated in single or multiple video streams,
a multiple video input signal comprising, at least, a first single video input
15 signal and a second single video input signal, where the video input signals are interpreted according to any of the above methods.
- 18.- An imaging system according to claim 11, adapted to reduce latency between a pair of image frames of the first sequence of image frames and a subsequent output of a corresponding pair of image frames of the
20 fourth sequence by starting the output of a first multiple view display image frame of the pair of display image frames of the fourth sequence before arrival of the complete pair of image frames of the first sequence of image frames when it is known that the completion of the arrival will occur before the expected completion of the output of the first multiple
25 view display image frame of the fourth sequence.
- 19.- An imaging system according to claim 1, comprising splitting means for splitting the first sequence of image frames into the second sequence and the third sequence.
- 20.- An imaging system according to claim 19, furthermore comprising
30 processing means for processing any of the second sequence or third sequence.
- 21.- An imaging system according to claim 19, furthermore comprising a combining means for combining the second sequence and the third

sequence into one combined stream of image frames.

- 22.- An imaging system according to claims 1, wherein the at least two video processing devices are any of, or a combination of, front projectors, rear projectors, direct view displays, or control devices with outputs to drive video devices.
- 23.- Use of an imaging system according to claim 1, wherein the video processing devices create any of, or a combination of one or more of: a single large image by tiling the at least two video processing devices, multiple separate independent tiled images by using multiple sub-sets of the video processing devices, or single projected images using a single video processing device.
- 24.- A method for performing multiple view imaging by means of at least a first and a second video processing devices, each of the at least first and second video processing devices being for displaying a video image on one or more display devices, the method comprising:
- receiving at least a first sequence of image frames comprising at least a second sequence of image frames and a third sequence of image frames, the at least second and third sequences of images frames being for generating at least first and second video images, respectively, and outputting at least a fourth sequence of image frames, the at least fourth sequences of image frames being for generating at least one of the first and second video images, the fourth sequences of image frames from the first and second video processing devices being asynchronous with respect to the first and second sequence,
- the method comprising generating a linking signal for synchronising images displayed by the at least one of the first and second video processing devices on the display device.
- 25.- A method according to claim 24, wherein generating the linking signal comprises generating the linking signal externally to the video processing devices.
- 26.- A method according to claim 24, wherein generating the linking signal comprises generating the linking signal internally in one of the video processing devices.

- 27.- A method according to claim 24, furthermore comprising providing images from at least one image source.
- 28.- A method according to claim 27, wherein the images are provided from at least two image sources of different type.
- 5 29.- A method according to claim 24, comprising processing the first sequence of image frames in pairs for the purpose of field rate conversion.
- 30.- A method according to claim 29, comprising copying a pair of image frames of the first sequence and inserting the copied pair in the first
10 sequence for the purpose of up conversion.
- 31.- A method according to claim 29, comprising eliminating a pair of image frames from the first sequence for the purpose of down conversion.
- 32.- A method according to claim 24, furthermore comprising generating a control signal for an image modulation device allowing the image
15 modulation device to properly synchronise with an output rate and phase of the fourth sequence of image frames.
- 33.- A method according to claim 29, wherein the processing of image frames of the first sequence is optimised to reduce latency between a pair of image frames of the first sequence and a subsequent output of a
20 corresponding pair of image frames of the fourth sequence by starting the output of a first multiple view display image frame of the fourth sequence before arrival of the complete pair of image frames of the first sequence of image frames when it is known that the completion of the arrival will occur before the expected completion of the output of the first multiple
25 view display image frame of the fourth sequence.
- 34.- A method according to claim 24, comprising splitting the first sequence of image frames into the second sequence intended to be viewed by a first eye and the third sequence intended to be viewed by a second eye of a human person.
- 30 35.- A method according to claim 34, furthermore comprising processing any of the second sequence or third sequence.
- 36.- A method according to claim 34, furthermore comprising combining the second sequence and the third sequence into one combined stream of

image frames.

- 37.- A controller for controlling the operation of at least a first and second video processing devices in an imaging system for displaying multiple view images, each of the at least first and second video processing devices being for displaying a video image on one or more display devices, each video processing device receiving at least a first sequence of image frames comprising at least a second sequence of image frames and a third sequence of image frames, the at least second and third sequences of image frames being for generating at least first and second video images, respectively, and each video processing device outputting at least a fourth sequence of image frames, the fourth sequences of image frames being for generating at least one of the first or second video images, the fourth sequences of image frames from the first and second video processing devices being asynchronous with respect to the first and second sequences, wherein the controller is adapted to generate a linking signal for synchronising images displayed by at least one of the at least first and second video processing devices on the display device.